Name: _____ Date: _____

Unit 1 - Topic 4

Elements, Compounds, and Mixtures

Read the poem, then answer the questions.

Elements are simple things
That can't be broken down.
When put together chemically,
They always form compounds.
But thinking of the usual way
That chemicals are found,
It's jumbled up in mixtures that
Most chemicals abound.

Chemicals are everywhere–
One of life's permanent fixtures.
Yes, chemicals really matter–
Those elements, compounds, and mixtures.

Elements are building blocks
From which all things are made.
There are over one hundred elements
In the element parade.
And they're all made of atoms
Just as Mr. Dalton said.
It's elements, pure and simple,
Nothing simpler, I'm afraid.

Chemicals are everywhere–
One of life's permanent fixtures.
Yes, chemicals really matter–
Those elements, compounds, and mixtures.

Compounds form from elements,
And, 'though it may seem strange,
When they form a compound,
Their properties all change.
As chemicals combine,
Their particles rearranged,
To form some different substances,
Their properties all change.

Chemicals are everywhere–
One of life's permanent fixtures.
Yes, chemicals really matter–
Those elements, compounds, and mixtures.

With mixtures, it's so different,
And there's one thing you can bet–
Put salt and water together,
It will still be salty and wet.
'Though you might be fearing changes,
There's no reason for to fret.
Without chemical combination
There's nothing new to get.

Chemicals are everywhere–
One of life's permanent fixtures.
Yes, chemicals really matter–
Those elements, compounds, and mixtures.

1. According to the poem, what are the three forms in which matter is found? _____

   _____

2. In which form is matter most commonly found? _____

3. What are the main differences between elements, compounds, and mixtures?

   _____

   _____

   _____

4. Why is it that when you mix salt and water together, 'It will still be salty and wet?'

   _____

   _____

5. Hydrogen is an explosive gas and oxygen supports combustion? How is this possible then, for water, which is composed of hydrogen and oxygen, to put out fires? Quote lines in the poem that explain this.

   _____

   _____

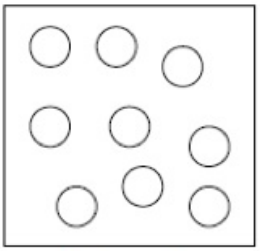
   _____

6. Indicate whether each of the following describes an element, compound, or mixture.
   a) _____ composed of more than one substance
   b) _____ simple substance that can't be broken down
   c) _____ has different properties than the substances that compose it
   d) _____ gold
   e) _____ air
   f) _____ juice
   g) _____ sugar
   h) _____ oxygen
   i) _____ table salt

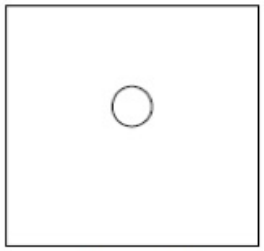
More Matter Questions...

7. Often times it is useful to separate matter. For example, you strain cooked pasta to get the liquid out. In a fuel cell, water is separated into hydrogen and oxygen.
   a) Which type of matter can be separated by physical methods (no bonds need to break) such as filtering or distillation? _____
   b) Which type of matter needs to be separated by chemical methods (breaking chemical bonds required) such as electrolysis or decomposition? _____
8. Students in a chemistry course were asked the following question on a unit exam: *"Draw a diagram representing an element using circles as atoms."*

The following diagrams represent the two types of answers given by students. Which drawing is the best representation of an element? Explain in the space given to the right.



Drawing A



Drawing B